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The Administrative Record Staff

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STATE OF COLORADO

COLORADO DEPARTMENT OF HEALTH
4210 East 11th Avenue
Denver, Colorado 80220
Phone (303) 320-8333

Pond wait for next review to reopen

Roy Romer
Governor

Thomas M. Vernon, M.D
Executive Director

Ms. Candice Jierree
Department of Energy
P. O. Box 928
Golden, CO 80402

July 28, 1989

Dear Candice:

This transmittal includes a marked-up copy of DOE's most recent draft of the holding pond sampling plan. We have added back in the analytical methods for all of the parameters that we intend to analyze for in the samples which you will be taking of the pond water and splitting with the Department of Health. The other less significant details (discussed with Chris Woods and Cindy Sunblad on July 26) and any other minor changes that you need to make can be worked out before issuing a final sampling plan.

We consider the interim sampling plan to be ready for this initial sampling event and request that you proceed to make arrangements for the sampling to occur as soon as possible—hopefully Monday, July 31. As the Agreement in Principle states that the Health Department would be reviewing the "safety" of the discharge, DOE has known about the need to identify a laboratory for sample analysis for quite some time. In light of the current rains we strongly urge you to sample as soon as possible so that DOE can comply with its obligations under the Agreement prior to discharge. In addition, we have agreed, for this initial sampling event, to have our laboratory place these samples as a higher priority than others so that we can obtain all of our results within 7 days of receiving the samples. We are anticipating that DOE will be able to obtain results from their lab in a similar amount of time. Our intention is to review the data as soon as we obtain both sets of results and make a determination as to the acceptability of a discharge within 2 days of receiving the data.

Finally, the effluent release protocol needs to be finalized quickly, but given the current circumstances we feel that that need not be concluded prior to the pre-discharge sampling of the ponds that needs to occur quickly. Should you have any questions regarding this matter, please contact me at 331-4556 or Judy Bruch at 331-4594.

Sincerely,

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Paul D. Frohardt
Interim Rocky Flats Program Manager

cc: Bob Shankland, Tom Looby, Tim Holeman, Tom Olsen, Chris Woods, Cindy Sunblad, Dave Nickless, Stan May

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~~July 25, 1989 Version~~
~~received by CDH~~

INTERIM

Rocky Flats Plant Holding Pond Sampling Plan

~~July 19, 1989~~
July 28, 1989

I. Introduction

The Rocky Flats Plant under the management of the United States Department of Energy (DOE) has an "Agreement in Principle" as of June 15, 1989 with the Colorado Department of Health (CDH) to expand the role of outside monitoring of this facility. As part of this agreement, additional and extensive sampling of holding ponds A-4, B- 5 and C-2 (see attached map) will be conducted.

All sampling is to follow the Technical Directive Document (R8-8701-42), Standard Operating Procedures for Field Samplers EPA- Region VIII (See reference). The samples are to be taken in a correct, safe and timely manner. Absolute attention will be paid to assure sampler safety and sample quality.

II. Objectives

To investigate the quality of the water being held in ponds A-4, B-5 and C-2 in accordance with the Clean Water Act, and Colorado State Water Quality Standards and the "Agreement in Principle" on pond monitoring of June 15, 1989 between the Colorado Department of Health and DOE.

III. Background Information on Holding Ponds

At Rocky Flats Plant there are three series of ponds labeled A, B and C. Ponds A-4, B-5 and C-2 are used as holding ponds on the plant. The water in these ponds is collected and analyzed for compliance with water standards prior to off site discharge. Previously, these three ponds were monitored under a NPDES permit. NPDES permit compliance will continue as an objective of the Rocky Flats Plant.

Holding Pond A-4 on North Walnut Creek receives surface water runoff and ground water seepage from the north side of the Rocky Flats plant. Holding Pond A-4 is used to impound this surface runoff for analysis prior to discharge into Walnut Creek.

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South Walnut Creek receives surface water runoff and ground water seepage from the central part of the plant. This water is diverted through a culvert system to Pond B-4 and then to Pond B-5 where the water is held prior to controlled off site discharge into Walnut Creek.

Surface runoff water and groundwater seepage from the south side of the plant is collected in an interceptor ditch which flows to surface water control Pond C-2. Water in Pond C-2 is held and analyzed prior to off site discharge into Woman Creek.

IV. Field Procedures

A. Concept of Operations

Sampling of the holding ponds will be conducted periodically based on the need to discharge each pond.

1. Safety

All samplers will use protective clothing including steel shank safety boots, protective coveralls, safety glasses and protective gloves. No sampling will done alone and the team will be supplied with remote radios in case an emergency situation arises. Radio communication will be supplied by Rockwells. Environmental Management Group. Any emergency medical attention could be attended to in building 122 or the victim could be to an off site facility. All samplers and field participants shall at all times comply with OSHA regulations.

2. Logistics

Access to the site may be coordinated through Rockwell contacts . Prior to sampling DOE-Rockwell will contact interested parties CDH, city of Broomfield and city of Westminster so that they will have the opportunity to split samples.

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B. Sampling Locations

Water samples will be collected at points near the outlet of each pond. In the near future, sample locations approximately 20 feet from the dam outlets will be used in order to establish consistency and assure year round availability of samples. Due to icing over of the ponds in the winter, ramps or similar structures will be constructed to facilitate samplers.

C. Sampling Methods

The sampling team will collect three samples from each pond. The first sample will be taken at the midpoint depth, the second sample will be taken 2 feet from the bottom of the pond, and the third sample will be taken approximately 2 feet below the surface of the pond. These three samples will constitute a representative sample for each zone within the pond and will be packed separately to avoid contamination in the field. This will allow the laboratories to produce their own composites of these samples at their location.

All sampling equipment will be composed of stainless steel, teflon and/or acrylic. To decrease the chance of cross contamination, collectors will be decontaminated between station. Gloves will be worn at all times to assure sampler safety. The sample containers will be specific to the type of testing as follows:

Radioactive Testing (Alpha and Beta) — SW-846 6-40

* Containers- 500 ml polyethylene.

*Sample Preservation- preserved with concentrated nitric acid to a pH of 2.0 less.

*Maximum Holding Times- Samples must be analyzed within 6 months.

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Radioactive Testing (Tritium) AEC - Health + Safety Lab Pub. #300 (HASL-300), Pg D-03-07

*Containers-250 ml polyethylene

*Sample Preservation- None, sample neutral.

*Maximum Holding Times- Samples must be analyzed within 6 months.

BNA Extractables (EPA Method 625)

*Containers- 1 liter amber glass. French or Boston round design is recommended. Bottle caps must be teflon lined and threaded to fit sample bottles.

*Sample Preservation-Samples may be preserved by maintaining at 4 degrees C until compositing and sample splitting is completed.

*Maximum Holding Times- All samples must be extracted within 7 days and completely analyzed within 30 days.

Organochlorine Pesticides and PCB's (EPA Method 608)

*Containers- Amber glass 500 ml. French or Boston round design is recommended. Bottle caps must be teflon lined and threaded to fit sample bottles.

*Sample Preservation-Samples may be preserved by maintaining at 4 degrees C until compositing and sample splitting is completed.

*Maximum Holding Times- All samples must be extracted within 7 days and completely analyzed within 30 days.

Nitrogen and Phosphorous Containing Pesticides (EPA Method 507)

*Containers- Amber glass 500 ml. French or Boston round design recommended. Bottle caps must be teflon lined and threaded to fit sample bottles.

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*Sample Preservation-Samples may be preserved by maintaining at 4 degrees C until compositing and sample splitting is completed

*Maximum Holding Times- All samples must be extracted within 7 days and completely analyzed within 30 days

Herbicides (EPA Method 615)

*Containers- Amber glass 500 ml French or Boston round design recommended. Bottle caps must be teflon lined and threaded to fit sample bottles

*Sample Preservation-Samples may be preserved by maintaining at 4 degrees C until compositing and sample splitting is completed.

*Maximum Holding Times- All samples must be extracted within 7 days and completely analyzed within 30 days.

Volatile Organic Compound (EPA Method 502.2)

*Containers-Amber glass 2-40 ml screw cap vials with teflon septum. Fill to overflowing-no air bubbles. Collect at least one duplicate.

*Sample Preservation-Samples may be preserved by maintaining at 4 degrees C until compositing and sample splitting is completed.

*Maximum Holding Times-Analysis within 14 days of sample collection.

Metals (Total)

*Containers- 1-1 liter polyethylene (unfiltered)

*Sample Preservation- Acidify sample with 1+1 nitric acid to a pH of 2.0 or less. This will keep the metals in solution to minimize their adsorption on the container walls.

*Maximum Holding Times- All samples should be analyzed within 6 months of collection.

→ EPA Methods

As	206.4	Pb	239.2
Cd	213.2	dis Mn	243.1
T.C.	218.2	Hg	245.1
Cu	220.2	Se	270.3
dis Fe	236.1	Ag	272.2
		Zn	289.1
		Be	210.1
		Ni	249.1

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Chromium (Cr VI and Cr III will be resampled if total Cr value exceeds standard of 0.05 ~~micrograms~~ milligrams per liter)

*Containers-Polyethylene .

*Sample Preservation-Store samples on ice at 4 degrees C or less. Do not contact with acid.

*Maximum Holding Times-Samples must be analyzed within 24 hours of collection.

Metals (Mg and Fe)

*Containers-250 ml polyethylene (sample filtered with .45 micron cellulose acetate filter)

*Sample Preservation- Acidify sample with 1+1 nitric acid to a pH of 2.0 or less. This will keep the metals in solution to minimize their adsorption on the container walls.

*Maximum Holding Times- All samples should be analyzed within 6 months of collection.

Cyanide, Total and Amenable to Chlorination (EPA Method 335.1) ~~(EPA Method 335.2)~~

*Containers-2-1 liter polyethylene bottles.

*Sample Preservation-Addition of 2 ml of 10N NaOH to raise the pH to 12 or above and store in a closed dark bottle at 4 degrees C.

*Maximum Holding Time-24 hours with sulfide present.

Boron, and Nitrate (EPA Method 353.2) (Std Methods 405B)

*Container- 250 ml glass bottle.

*Sample Preservation-Addition of sulfuric acid to a pH of 2 or less and maintain at 4 degrees C until compositing and sample splitting is completed.

*Maximum Holding Time-48 hours.

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Nitrites must be analyzed within 48 hours

(Std Methods 408A)

Chloride, Sulfate, and Nitrite (EPA Method 354.1) (EPA Method 375.3)

*Container-1 liter polyethylene.

*Sample Preservation-Samples may be preserved by maintaining at 4 degrees C until compositing and sample splitting is completed.

*Maximum Holding Time-28 days.

D. Analytical Parameters

All samples will be analyzed for organic priority pollutants, volatile organic compounds, pesticides, metals, gross alpha and gross beta, tritium, cyanides and pH as measured in field.

E. Field Quality Control Procedures

All samples will be handled and preserved as described in EPA SOP for Field Samplers (see reference). Calibration of pH meters will follow the instrument manufacturer's instructions. Initial equipment calibration and decontamination will be done prior to going out into the field. All samples will be taken by technicians employed by Rockwell International or a contractor. Samples will be split with the Colorado Department of Health and any interested parties. New and unused sample containers will be supplied by the Rockwell contractor to assure consistency.

The following types of samples will be provided for quality assurance purposes:

Blanks- A minimum of 1 equipment blank in 20 samples will be provided by running analyte-free reagent-grade deionized water through the sample collection equipment. An additional mandatory trip blank will be prepared in a controlled environment and shipped from the field.

Field Duplicates- A minimum of 1 field duplicate in 20 will be prepared for each party.

Spiked Samples- Spiked samples will be prepared in the controlled environment and will be included as appropriate to insure analytical quality assurance. All samples that are spiked will be done in such a

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manner that it will be within the sensitivities of the analytical equipment so that it will not harm or damage such equipment.

F. Control of Contaminated Materials

In order to control the possible movement of any off site radionuclide contamination all samples leaving the site must be screened prior to leaving. This also applies to any equipment used by Rockwell contracted samplers. Screening of these samples will take a minimum of three hours.

G. Chain of Custody

Following the collection and identification of the samples, all samples will be sealed and handled in strict accordance with chain of custody protocol prescribed by the Handbook for Analytical Quality Control in Water and Waste Water Laboratories EPA 600/4-79-019.

References

Standard Operating Procedures for Field Samplers, Rev. 3, EPA-Region VIII Denver Colorado, January 1988.

Characterization of Hazardous Waste Sites-A Methods Manual, Volume II Available Sampling Methods, Second Edition.

Handbook for Analytical Quality Control in Water an Waste Water Laboratories EPA 600/4-79-019.

EPA Document 600/4-79-020 March 1983.

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